

PHENIX Run 6 Trigger Meeting

March 8, 2006

J. Nagle

	ERT_2x2 with 0.4 GeV threshold					
	ERT_4x4a with 2.1 GeV threshold					
	ERT_4x4b with 2.8 GeV threshold				BBCLL1	
	ERT_4x4c with 1.4 GeV threshold				250000	
	Trigger		Rejection	Raw	Prescale	Rate
1	Clock			10000000	999999	10
2	BBCLL1 (>0 tubes)		1.0	250000	3000	83
3	BBCLL1 (noVertexCut)		0.5	500000	60000	8
4	ZDCCLL1Wide		25.0	10000	1200	8
5	ZDCCLL1Narrow		10.0	25000	900	28
6	(BBCLL1>=1 & (ZDCN ZDCS)) Local_Polarimeter		9.0	27778	3000	9
7	ERTLL1_C [-1.4 GeV]		1.0	250000	9999999	0
8	ERTLL1_2x2 & BBCLL1		50.0	5000	9999	
9	ERTLL1_A & BBCLL1 [-2.1 GeV]		500.0	500	0	
10	ERTLL1_B [2.8 GeV]		600.0	417	0	
11	ERTLL1_B & BBCLL1 [-2.8 GeV]		1800.0	139	0	
12	ERTLL1_C & BBCLL1 [-1.4 GeV]		60.0	4167	1	
13	ERTLL1_Electron & BBCLL1 [-400 MeV]		200.0	1250	0	
14	MUID_LL1_N_1Deep & BBCLL1		700.0	357	0	
15	MUID_LL1_S_1Deep & BBCLL1		700.0	357	0	
16	MUID_LL1_N_1Shallow & BBCLL1		150.0	1667	2	
17	MUID_LL1_S_1Shallow & BBCLL1		150.0	1667	2	
18	MUID_LL1_N_1D1S & BBCLL1		20000.0	13	0	
19	MUID_LL1_S_1D1S & BBCLL1		20000.0	13	0	
20	MUID_LL1_N_1Deep & S_1Deep & BBCLL1		1.0		9999	
21	MUID_LL1_N_1D1S MUID_LL1_S_1D1S				9999	
22	(Y+B+ + Y-B-) : GL1P check	test	OFF			
23	ZDCN ZDCS	test	OFF			
24	ZDCNS	test	OFF			
25	MPC Trigger 1	? Rej Unkn	1.0	250000	9999	
26	MPC Trigger 2	?Rej Unkn	1.0	250000	9999	
27	ERTLL1_A [-2.1 GeV]	?Rej Unkn	1.0	250000	9999	
28	PPG(Pedestal)		1.0	250000	9999999	0
29	PPG(Test Pulse)				0	1
30	PPG(Laser)				0	1
31	Noise		1.0	250000	9999999	0
						5436

Proposed new triggers to add.

ERT Electron = 119
*Expected 200!

MUIDN1D Rej = 357
MUIDS1D Rej = 545
MUIDN1S Rej = 69
MUIDS1S Rej = 91

*These are roughly x2
Worse than expected.

MUIDN1D1S Rej = 3700
MUIDS1D1S Rej = 18,000

Clock	0x00000002	9999999	Enabled	1232656818	-495516446	2527	0.88	-0.40
BBCLL1(>0 tubes)	0x00000004	125	Enabled	58298598	55057868	436967	151.83	0.94
BBCLL1(noVertexCut)	0x00000008	249	Enabled	197250356	186282754	745131	258.91	0.94
ZDCLL1wide	0x00000010	5	Enabled	5884981	5557693	926282	321.85	0.94
ZDCLL1narrow	0x00000020	900	Enabled	2352855	2221716	2465	0.86	0.94
BBCLL1&(ZDCN ZDCS)	0x00000040	11	Enabled	8975600	8477687	706474	245.47	0.94
ERTBLT_4x4c	0x00000080	9999999	Enabled	511256016	448803825	45	0.02	0.88
ERTLL1_2x2&BBCLL1	0x00000100	9999999	Enabled	8608052	8112772	1	0.00	0.94
ERTLL1_4x4a&BBCLL1	0x00000200	0	Enabled	116602	108395	108395	37.66	0.93
ERTLL1_4x4c	0x00000400	2500	Enabled	533165545	465052955	185947	64.61	0.87
ERTLL1_4x4b&BBCLL1	0x00000800	0	Enabled	34780				
ERTLL1_4x4c&BBCLL1	0x00001000	0	Enabled	2209792	19			
ERTLL1_E&BBCLL1	0x00002000	0	Enabled	488666	4			
MUIDLL1_N1D&BBCLL1	0x00004000	0	Enabled	162910	1			
MUIDLL1_S1D&BBCLL1	0x00008000	0	Enabled	106900	1			
MUIDLL1_N1S&BBCLL1	0x00010000	9999999	Enabled	838976	7			
MUIDLL1_S1S&BBCLL1	0x00020000	9999999	Enabled	640066	6			
MUIDLL1_N1D1S&BBCLL1	0x00040000	0	Enabled	15899				
MUIDLL1_S1D1S&BBCLL1	0x00080000	0	Enabled	3300				
MUIDN_1D&BBCLL1	0x00100000	9999999	Enabled	247205	2			
MUIDS_1D&BBCLL1	0x00200000	9999999	Enabled	198212	1			
(Y+B+ + Y+B-)	0x00400000	9999999	Disabled	26611965				
ZDCN ZDCS	0x00800000	192	Enabled	89548631	845			
ZDCNS	0x01000000	5	Enabled	3829250	36			
RPC1&RPC2	0x02000000	0	Disabled	0				
RPC1 RPC2 SCINT_FWD	0x04000000	800	Disabled	0				
ERTLL1_4x4b	0x08000000	0	Enabled	194597	1			
PPG(Pedestal)	0x10000000	0	Enabled	2591				
PPG(Test Pulse)	0x20000000	0	Enabled	5180				
PPG(Laser)	0x40000000	0	Enabled	5180				
Noise	0x80000000	0	Disabled	44217813	0	0	0.00	0.00

Ratios:

BBCLL1(noVertexCut)/ BBCLL1 = 3.4

ZDCLL1wide/BBCLL1 = 0.10

ZDCLL1narrow/BBCLL1 = 0.040

*** This ratio was ~ 0.025 last year!**

ERT Electron = 119

MUIDN1D Rej = 357

MUIDS1D Rej = 545

MUIDN1S Rej = 69

MUIDS1S Rej = 91

MUIDN1D1S Rej = 3700

MUIDS1D1S Rej = 18,000

Summary for Run 188669

Begin run: 2006-03-08 03:54:22

Update: 2006-03-08 04:42:20

End run: 2006-03-08 04:42:20

Run duration: 2878 seconds

RHIC fill: 7576/7576

Run type: PHYSICS

Trigger configuration:

SuperPPRun6(18)

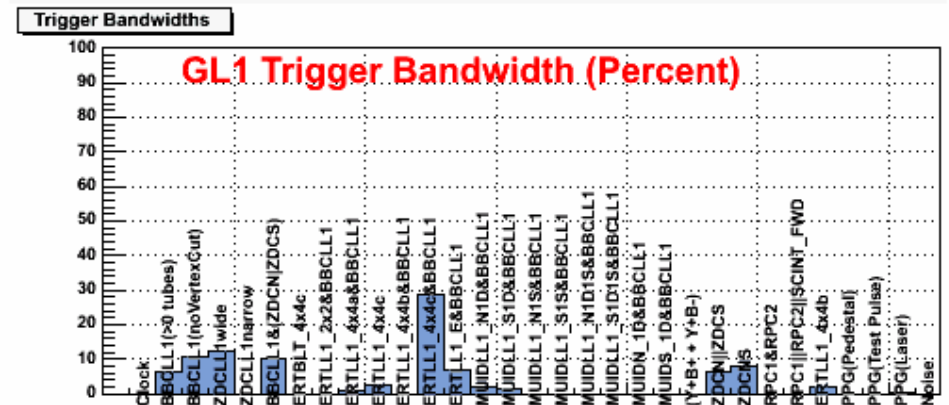
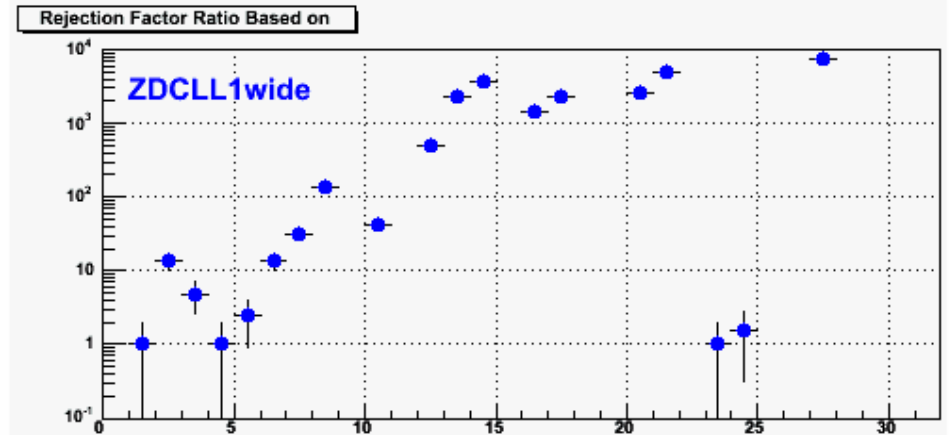
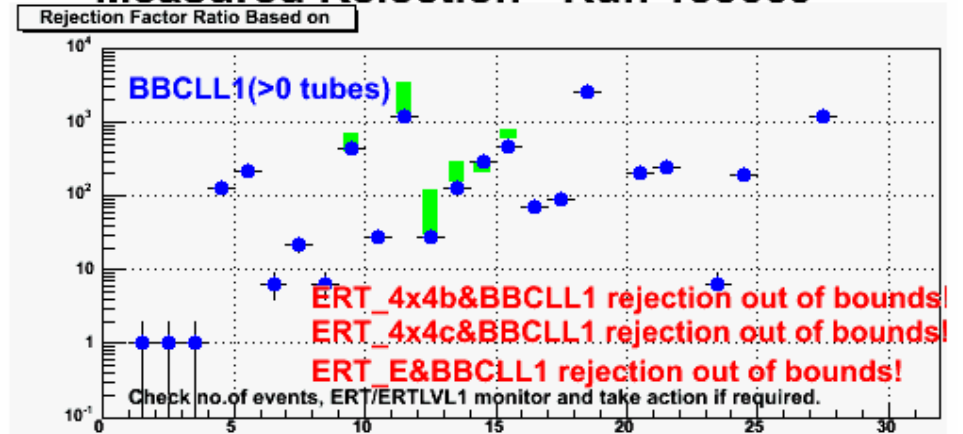
BB LL1 configuration: PP(19)

Partition: SuperBig

Events: 6570702

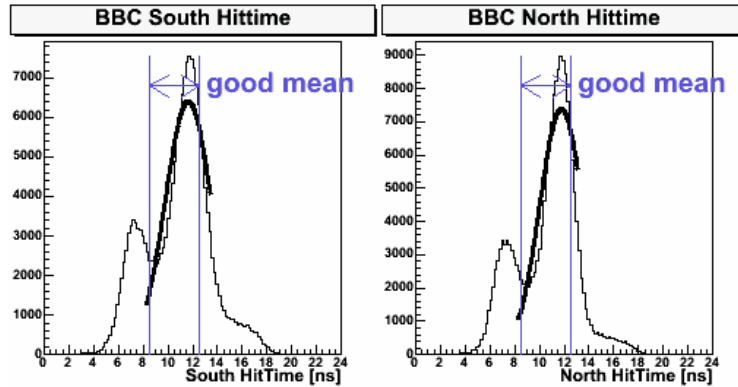
Events/sec: 2283.08

Measured Rejection - Run 188669



BBC ONLINE MONITOR

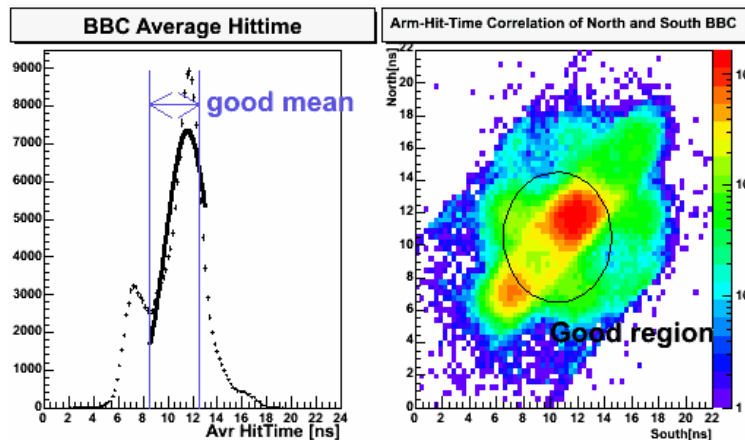
Run #188669 Events: 255742 Date:Wed Mar 8 04:43:02 200



South:11.6[ns] North:11.7[ns] ... OK

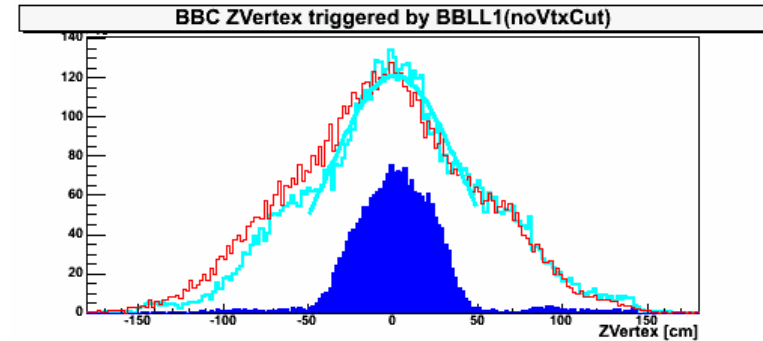
(Global offset : ... OK)

Shown data are triggered by BBLL1 $|z| < 130\text{cm}$



BBC ONLINE MONITOR

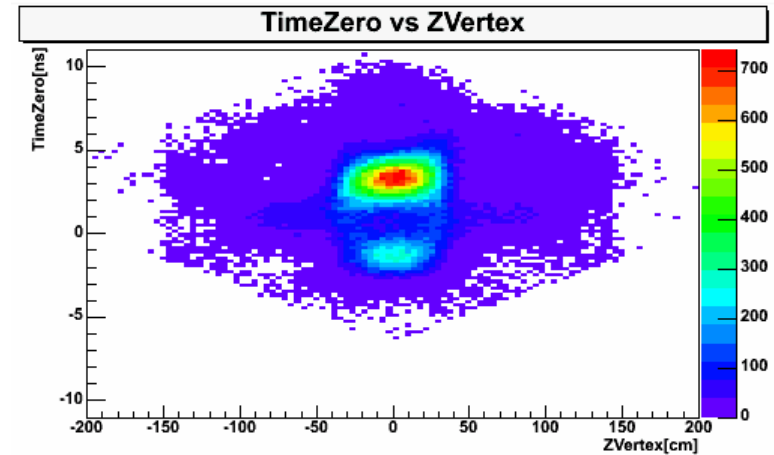
Run #188669 Events: 255742 Date:Wed Mar 8 04:43:02 200



$Z_{\text{BBLL1 w/o Vtx}}^{\text{Fit}} = 1\text{ cm} (\sigma = 38\text{ cm}) \dots \text{OK}$

Z [Trigger]	Zbbc [BBLL1]	Zzdc [ZDCL1wide]	Zbbc [BBCL1(noVtxCut)]
(Scale Fac.) #Evt.	(126) 17052	(6) 36040	(250) 28723
< Each histograms are scaled by scaled factor.>			
Vertex Mean (RMS)	2.7cm (31 cm)	-5.6cm (54.2 cm)	2.4cm (51.5 cm)

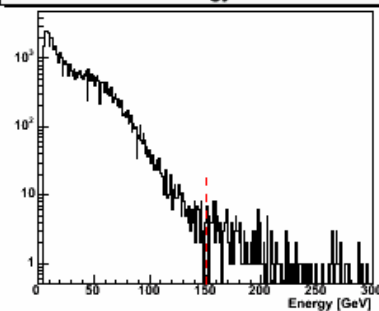
$\sigma_{\text{ZDC}} = 0.006 \in_{\text{BBC}} = 0.003$ beam in acceptance = 0.056 ZDC beam in acceptance = 0.302 BBC



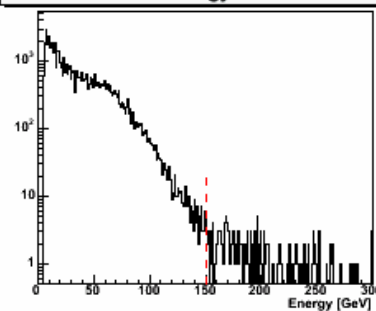
ZDC ONLINE MONITOR

Run 188669, 256055 events processed Date:Wed Mar 8 04:42:24 2006

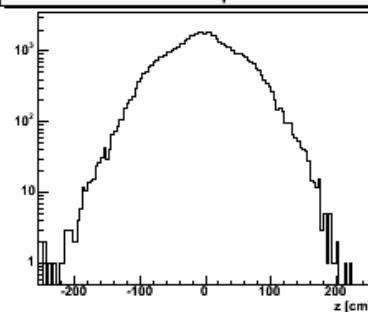
ZDC energy north



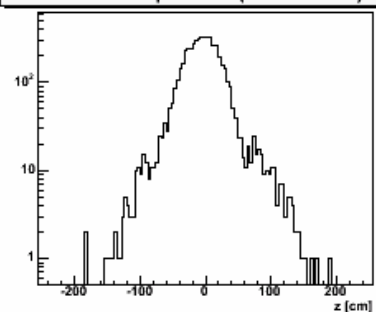
ZDC energy south



ZDC vertex position

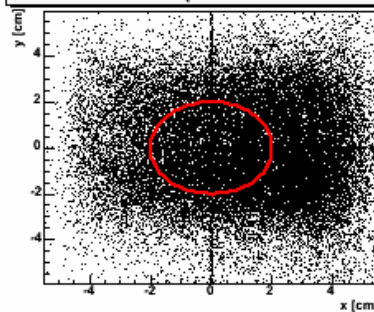


ZDC vertex position (BBCL1>=1)

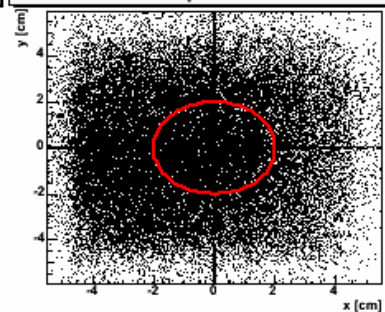


ZDC vertex position = -4.646 cm

SMD hit position north

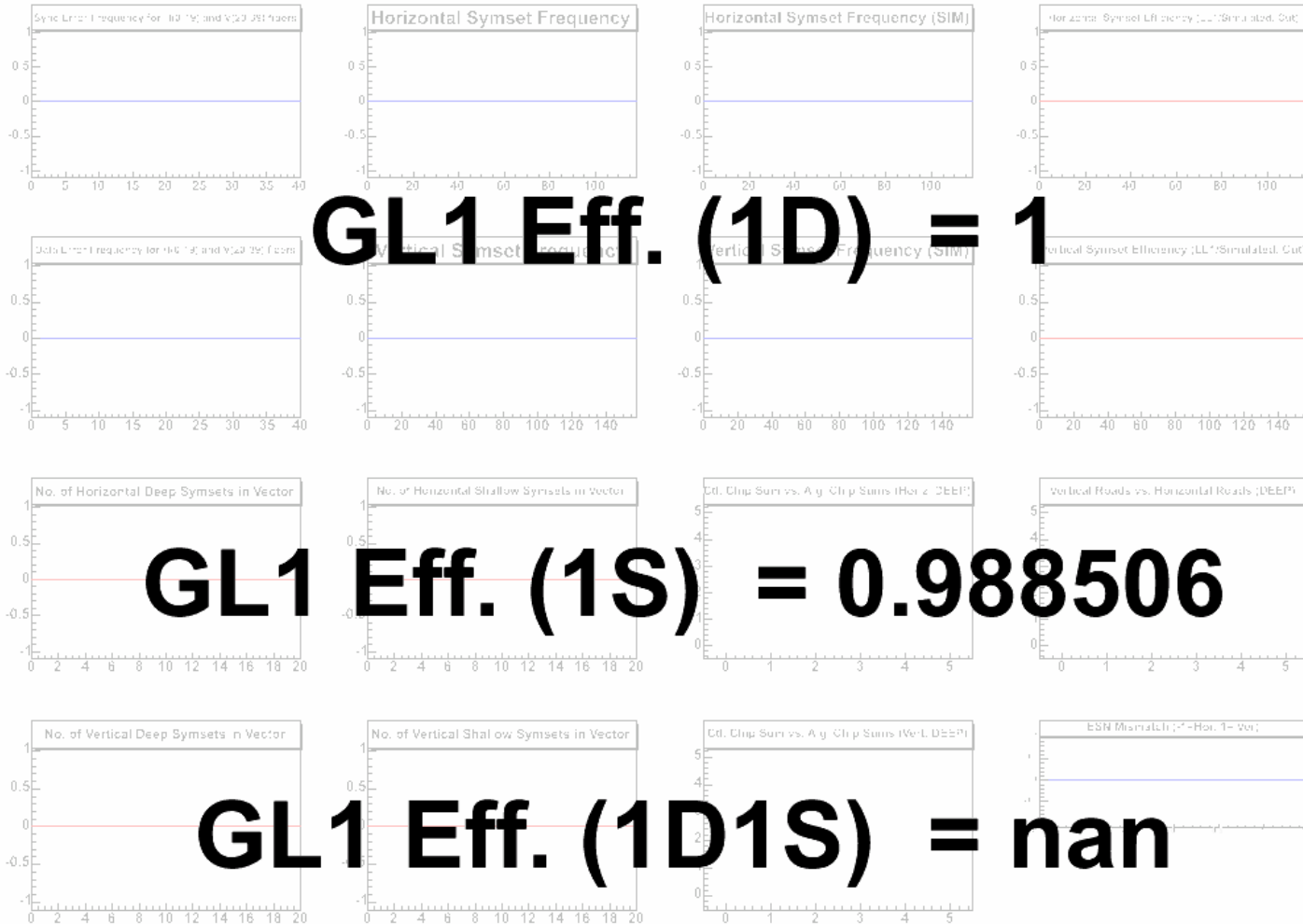


SMD hit position south



x = -0.6396 cm, y = -0.01389 cm x = 1.022 cm, y = -0.0431 cm

MUID LL1 NORTH : Run 188669 Wed Mar 8 04:42:24 2006



ERT Online Monitor Run 188669 (271170 events)

Wed Mar 8 04:42:24 2006

